

PARK CITY MUNICIPAL CORPORATION

STORM WATER MANAGEMENT PLAN

2005 ANNUAL REPORT

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SECTION 1.0 STORM WATER MANAGEMENT PLAN OVERVIEW

In accordance with Park City's Storm Water Management Plan, the purpose of this report is to submit to the Utah Department of Environmental Quality (UDEQ) the 2005 Annual Report. The intent of this document is to report the City's storm water quality efforts and achievements for the year 2005 (**Addendum 1**).

Similar to 2004, the year of 2005 has been very active in regards to Park City Municipal Corporation's (PCMC) continued effort to fulfill the obligations within the Storm Water Management Plan with the intent of improving water quality within Silver and East Canyon Creek watershed. Many of the department environmental goals that were established last year have been completed in addition to the expansion of conservation practices related to controlling non-point source pollution (NPS) within the watershed. Furthermore, PCMC has also diligently enforced the City's environmental ordinances, which also play an important role in improving water quality within the watershed.

For the year 2006, additional storm water quality improvements will be pursued as well as maintaining the current program goals and achievements. With that said, the following content summarizes the 2005 Storm Water Management Plan activities for the year.

SECTION 2.0 EDUCATION AND OUTREACH

This year PCMC again worked with Summit County to educate citizens and contractors on Best Management Practices related to improving storm water quality. The workshop was conducted on April 20th, 2005 at the Kimball Junction Library and approximately 80 contractors attended the meeting. During the meeting the Park City Environmental Information Handbook and storm water brochures were distributed as an educational resource. Also discussed were the requirements within the mitigation plan, which they are required to file with the Building Department. In that plan contractors are required to specify the type of erosion control BMPs, define soil management, and agree to control mud in egress and ingress areas. Furthermore, they are required to sign an Attachment A, which states that the contractor is aware of PCMC environmental ordinances and agrees to comply. This attachment also includes diagrams of acceptable BMP practices that should be installed on the construction site.

Subsection 2.1 Watershed Educational Signs

No more watersheds signs were posted this year however the five that have been installed have been maintained and have gotten positive feedback from the public. The signs are posted along McLeod Creek stream corridor in high exposure traffic areas near pet waste bag dispenser areas (Picture 1).



Picture 1: Pet Waste Dispenser and Watershed Sign.

For 2006 PCMC has established a goal of posting watershed information signs on the Rail Trail which spans into Silver Creek Watershed. The signs have yet to be designed, but it is anticipated that they will be similar to the educational signs posted along McLeod Creek stream corridor. Also planned for 2006 is to GPS the storm water in-flow grates located within the Prospector Park development and post no dumping signage near the inflows. This work is being coordinated with Lee Duncan (East Canyon Creek Watershed Coordinator) and it is anticipated that the majority of the work will be conducted by the Park City High School Environmental Class. Once the GPS coordinates are obtained for the inflows, this information will be integrated into PCMC Environmental GIS system for further applicability in regards to outreach and education. The City has currently budgeted \$2,000.00 for this activity that will be completed in 2006.

Subsection 2.2 Park City Environmental Information Handbook

The Environmental Information Handbook ([Addendum 2](#)) was revised to inform City residents of the environmental ordinances and daily household practices that are applicable for minimizing storm water impacts. The City printed 1500 handbooks this year, which was paid for under the Environmental Management System (EMS) budget (\$11,357.34). The revision of this outreach product was a measurable goal that was documented in the 2004 annual report. It should also be noted that the EMS Educational and Outreach components of the program were recognized by the Utah Pollution Prevention Board giving the City an award for “Pollution Prevention – Community Outreach and Education”. The handbook was distributed to the following entities within the City limits this year:

- Soils Ordinance Stakeholders
- Park City Citizens
- Real Estate Agents
- Contractors
- New Residents
- Watershed Stakeholder

Subsection 2.3 Building Department Education

PCMC Building Department continues to educate contractors who have been issued building permits for construction within the city limits. As previously stated, when a building permit is issued, the contractor is required to complete a mitigation plan template and sign an “Attachment

A” certification (Addendum 3.0) that commits them to comply with the environmental ordinances. The Building Department permit window also provides the following information:

- **Park City Environmental Information Handbook**
- **Storm Water Brochures**
- **Mitigation Plans**
- UDEQ Information

PCMC Building Department Inspectors also continue to enforce and educate contractors on the storm water requirements within the signed mitigation plan. Inspectors typically issue a “**Stop Work**” order if storm water BMP’s are not installed on the job site. Typically, two warning notices are issued to the contractor with the third notice being a “Stop Work” order. After that order is issued the contractor has 12 hours to remedy the situation before the permit is withdrawn.

For large developments such as the Empire Pass Development, Lookout at Deer Valley and The Line Condos the City mandates that no mud or sediment be allowed on the road. In addition, large city projects such as the China Bridge Expansion Project and the Quinn’s Junction Recreational Complex required separate Storm Water Management Plans. Since the China Bridge Expansion Project was within the boundaries of Marsac Mill CERCLIS site UT0001894054, a separate **Soils Management Plan** was written that addressed controls, worker health and safety, storm water management requirements, and soil disposal requirements. Before the project started the contractor was required to train the employees on all issues within the plan including storm water management.

Subsection 2.4 Water Conservation Outreach and Education

The City Xeriscape Garden located at 1327 Park Avenue continues to be maintained and is used by the public to acquire ideas on drought tolerant plants that can thrive within the Park City area. In addition to the garden, a comprehensive pamphlet is available at the Planning Department as a resource. PCMC believes the promotion of xeriscape concept directly benefits storm water quality in the following instances:

- Less land disturbance will result in less erosion and sediment migrating off-site.
- Less application of herbicides, pesticides, and fertilizer results in a reduction of pollutant concentrations migrating off-site with storm water flows.
- Reduction in overall run-off volume.
- Lower water usage from the culinary system.

It should also be noted, that PCMC has enacted a Conservation and Drought Management Plan, which defines the BMP’s for conserving water. This plan includes enforcing irrigation ordinances, defined water priorities, and public service announcements that are broadcast by the local radio and TV stations. Conveyances of water conservation practices are also accomplished on posters and bus advertisements.

Subsection 2.5 Residential Storm Water Brochure

The residential storm water **brochure** is still available in the following areas:

- Planning Department
- Building Department
- Library

In addition, on February 26th 2005, PCMC submitted to the Park Record a residential storm water brochure (brochure **front** and **back**) within the weekend paper. The Park Record has 9500 subscribers that receive this paper and the storm water brochure flyer. In addition, several meetings were also conducted with Home Owners Associations and groups like “Friends of the Farm” where the storm water brochures and environmental handbook were distributed.

Subsection 2.6 Others Trained

On April 15th 2005 the Utah Job Corp celebrated its 40th Anniversary by providing 40 volunteers that planted native seed mix and trees along the McLeod Creek stream corridor. During this time the volunteers also learn about PCMC Storm Water Management Plan and efforts that can be employed to minimize storm water impacts. Volunteers are given an overview of East Canyon Creek and the associated pollutants that have resulted in the watershed being impaired and listed on the 303 (d) list.



Picture 2: Job Corp Tree Planting Crew April 05.

SECTION 3.0 ORDINANCE ENFORCEMENT ACTIVITY

The purpose of this section is to document PCMC enforcement activities related to implementing the ordinances contained in the Building Department Code. PCMC currently administers several programs and regulations that either directly or indirectly addresses storm water runoff from construction, development sites, and biological sensitive areas within the City. The intent of these ordinances is to ensure that controls are in place to minimize water quality impacts and protect human health and the environment.

Subsection 3.1 Construction Mitigation and Storm Water Enforcement

Construction **mitigation plans** are required for all construction projects that require a building permit. The mitigation plans are reviewed and approved during the building permit and plan-check process. As specified in this plan, the contractor must control dust and mud from migrating from the construction site. Furthermore, BMP's must be installed along the perimeter of the job site and storm water inflows (silt screen fencing, socks, straw bales). During compliance inspections, inspectors assure that gravel is placed on ingress and egress areas to help control sediment loss from the job site. Also, the plan checkers require that submitted plans

identify the proposed BMPs and where they will be installed. The following table summarizes the 2005 storm water enforcement activities for the building inspectors, code enforcement, and plan checkers:

Representative	Stop Work Order	Enforcement Inspection	Plan Check
Rich Novasio (New)	3	3	
Dale Nichols	8	160	51
Jeff Schoenbacher	10	90	
John Allen	1	75	
Kurt Simister	20	179	
Michelle Downard	4	70	
Richard Carlile			125
Richard VonWeller		8	
Roger Evans			42
Doug Thacker		10	

Subsection 3.2 Soils Ordinance Capping Activity

The Prospector Soils Ordinance Area which mandates a clean-topsoil substrate of six inches for lots that exhibit elevated lead levels exceeding 200 ppm lead had a substantial amount of activity this year. In addition to the clean-topsoil requirement, the ordinance also requires the establishment of suitable grass cover or xeriscape (i.e. weed barrier fabric covered with bark or rock) to prevent the erosion of topsoil. To further protect the cap, the parking of vehicles on these areas is prohibited in order to minimize sediment displacement and damage to the cap. The implementation of this ordinance results in storm water flow having minimal contact with the underlying mine tailings. PCMC continues to thrive for 100% cap compliance for properties residing within the Soils Ordinance Boundary. Summarizing the capping activities for 2005, a total of 38 lots were capped this year within the Soils Ordinance Boundary. While this report is being written, many owners are capping their property and as a result the City anticipates this number increasing by the end of the year. The Figure 1 represents 2004 activity and Figure 2 is the current cap compliance for properties residing in the original boundaries (lots depicted in red have been capped):

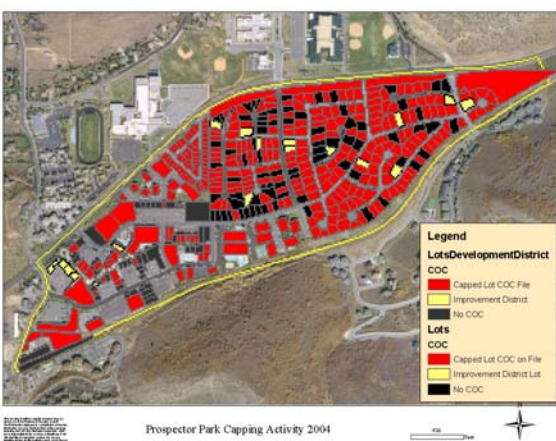


Figure 1: Prospector Map 10/15/04

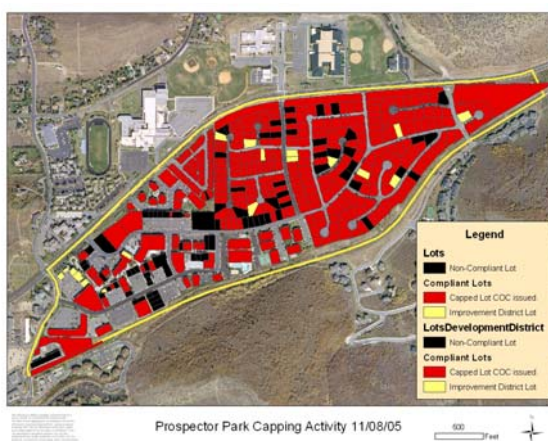


Figure 2: Prospector Map 11/08/05

Subsection 3.3 Elimination of Potential Contamination Source

Early in the year the City debated the relocation of the Daly Mine Tailings dump to a designated repository from the headwaters of Silver Creek within Empire Canyon (Picture 3). During this debate, PCMC staff expressed concerns with long-term maintenance and surface water run-off originating from the Daly West dump. In addition, it was also revealed that the Daly West Dump was within the Judge Tunnel Drinking Water Source Protection zone, which the city is required to protect and manage. Because of these concerns, the City Council voted to have United Park City Mines relocate 59,000 cu/yds of mine tailing waste to a designated repository within Richardson Flats.

This project was conducted under a prescriptive Conditional Use Permit and the hauling of this material was completed October 15th 2005. PCMC believes that the removal of this source will benefit the Silver Creek Watershed since this potential contaminate source will not impact spring run-off and add additional heavy metal load to the watershed. Furthermore, the City also believes that the elimination of this mine tailings source is beneficial to the Judge Tunnel drinking water source protection zone as well as alleviating an area that would expand the Soils Ordinance institutional controls.



Picture 3: Daly West Dump Removal.

Subsection 3.4 Illicit Discharge and Other Enforcement

During the year of 2005 five illicit discharges were addressed within the City limits; one of these discharges was of an unknown white substance and it is unknown who caused this discharge. The remaining issues were associated with **diesel fuel releases** and were mitigated with assistance from Park City Fire Department Haz- Mat unit. In addition, representatives from Summit County Health Department were also involved in the remediation of these incidents.

PCMC also sent out **reminder notices** to all gas stations that utilize an oil/water separator to treat storm water run-off originating from the facility. The intent of this notice is to remind the gas stations that in order for the separator to work, it must be maintained. All stations that received this notice responded to the City that their units were serviced and therefore functional. Periodic inspections of these units are conducted by the Environmental Coordinator to verify they are properly working.

SECTION 4.0 OPEN SPACE PROPERTY ACQUISITION

PCMC has been very proactive in acquiring open space and recognizes that open space designations have many benefits related to improving storm water quality.

The City continues to improve upon the open space acreage and has one additional open space acquisitions for the year of 2005. On January 1st 2005, PCMC acquired an additional 112-acre parcel committed to open space known as the Hope Mining Claim. The open space program is funded from a variety of sources including a \$10 million open space bond. Currently the total open space portfolio that is owned by PCMC is over 4,000 acres of land. This acreage includes more than three miles of riparian/stream protection zones to buffer McLeod Creek and Silver Creek from storm water runoff impacts. PCMC has concentrated on acquiring open space properties that are considered sensitive lands, including steep slopes, wetlands, stream riparian areas, visual corridors, wildlife habitat, and agricultural lands. PCMC believes the open space properties provide storm water runoff protection by allowing increased water infiltration, and stream bank and wetland protection. **Addendum 11.0** is a map of all of the open-space owned by Park City Municipal Corporation.

SECTION 5.0 DEPARTMENT COMPLETED MEASURABLE GOALS

As specified in PCMC Storm Water Management Plan, annual goals are established for each department every year, with the intent of pursuing projects that have the potential of improving water quality. This section is intended to document the goals that were completed for 2005.

Subsection 5.1 Building Department

The Building Department completed the goals that were established for 2005. As stated in Subsection 3.1 the building inspectors have been diligent in enforcing the mitigation plan requirements and verifying contractors install storm water BMPs (**Addendum 6.0 Stop Work Warning Notice**). A good example of the inspectors enforcing the construction BMP requirements are depicted in Picture 4 and 5. Picture 4 represents a construction project that did not install and silt screen fencing and Picture 5 is after the inspector enforces the mitigation plan requirements. PCMC Building Department believes that further education will continue to be an important component in order to get all contractors up to date on the City's Building Code SWMP requirements.



Picture 4: Pre-Enforcement.



Picture 5: Post Enforcement.

As previously stated, the plan checkers continue to require that all building plans identify storm water BMPs and the specific locations where they are installed. Contractors are still required to read and sign an “Attachment A” certification which states they will comply with the signed mitigation plan and that they understand PCMC environmental ordinances. Also, attached to all signed “Attachment A” certifications is a diagram of approved storm water management controls.

The Building Department was also active in public outreach, in distributing the Environmental Information Handbook, Park Record Flyers, and Ordinance BMP Homeowner Brochure and contractor training sessions.

Subsection 5.2 City Engineer Department

The City Engineer Department continues to pursue the goal of requiring storm water BMPs and sediment retention basins for all projects. There were many road projects this year that resulted in the disturbance of steep slope, therefore the installation of silt screen fencing as well as erosion control blankets were mandated for these projects. The main intent of the blankets is to temporarily stabilize and protect disturbed soil from precipitation and surface erosion, to increase infiltration, decrease compaction and soil crusting, and to conserve soil moisture. The new mine haul road and various other projects utilized the erosion control blankets (Picture 6).



Picture 6: Erosion Blanket Marsac Road.

The City Engineer requires new developments and projects to incorporate and define storm water management practices. Regarding storm water detention basins; the Empire Pass Development (Previously Flagstaff) constructed a half acre detention basin to accommodate run-off that originates from this development (Picture 7).



Picture 7: Empire Pass Sediment Basin.

Other sediment detention basins constructed include Lookout at Deer Valley, which constructed three basins and The Line Condominium development installed one underground detention basin. A measurable goal for this department for 2006 will be related to the Silver Star Development where three additional sediment basins are planned. Lastly during the construction of street projects the City Engineer requires that the storm water accumulation structures be equipped with 8" silt traps. This year 17 units were installed at the April Mountain Development and 12 at the Eagle Pointe Phase 4 Project, all units were equipped with an 8" silt trap at the base.

Subsection 5.3 Parks and Golf Department

The Park and Golf Department continue to be very proactive in controlling non-point source pollution originating from PCMC facilities. This department is responsible for maintaining the Park Avenue staged sediment trap that was constructed in 2003. This year the sediment trap was excavated once, resulting in the removal of 17 tons of sediment (September 13th 2005). The reason the trap was not cleaned out in the spring, is staff determined that the unit had plenty of capacity for spring run-off.

On October 25th 2005 a truck crashed into the area removing the mid stage trap area; therefore staff is currently planning on repairing this area. The repair of this area has been added as a measurable goal for the golf course.



Picture 8: Park Ave outfall August 22nd before clean-out.

This year Park City Golf Course did not construct any new detention basins to retain course storm water run-off before it enters McLeod Creek. Nonetheless, the basins that are currently constructed continue to be maintained by the golf course and it is anticipated that a unit will be built up-gradient from Pond 9. In the event this unit is constructed, it will act as a first stage in accumulating sediment before it enters the pond. Also, the golf course continues to maintain several buffer areas throughout the course. These buffer areas reside along all streams and ponds that are within the golf course. Due to the flooding that occurred this spring, PCMC had to remove some vegetation that was obstructing flow.

The dredging of Pond 9 continues to be a measurable goal and is one that is planned to be achieved in 2006. This year PCMC researched different dredging options; however the 10 NTU standard within the alteration permit was found to be unattainable for conducting this type of activity within the East Canyon Creek watershed. This was a major limiting factor for finding a contractor willing to conduct the dredging work. PCMC initial direction was to research hydraulic dredging to minimize the impact to the watershed. However, in addition to the NTU standard the hydraulic dredging company that was consulted, had expressed concern with the clay content which increases the difficulty of removing the sediment as well as the underlying rock that would impede uniform dredging of the pond. PCMC did put this work out for bid, but received no bids due to the fact contractors did not believe the project could be completed under the current regulatory limitations. These are the circumstances that have resulted in the City to re-evaluate dredging options and planning on completing this project in 2006. PCMC would like to conduct the project in a manner that results in getting the most accomplished for the money allocated. With this goal in mind the City is considering the following and will formulate a complete project description by the end of November 30th 2005:

- Conventional dredging appears to be the most economical and would allow additional funds for other improvements to this drainage. As a result, PCMC will document a time

line that specifies the length of time the watershed would be impacted with a sediment load in the event the pond is dredged conventionally.

- Additional funding will result in PCMC being able to construct a sediment detention basin upstream from Pond 9. This structure would act as a primary catch basin for sediment and increase the long-term capacity of Pond 9.
- PCMC will research the installation of an incremental drain standpipe (riser) as a retrofit to the current drain. The installation of a riser will allow the pond to be drained incrementally in a manner that would minimize the sediment load into the watershed. The current drain pipe is situated at the base of the pond, therefore when it is opened accumulated sediment is purged into the watershed. Furthermore, installing this type of unit will also improve retention during future dredging activities.

PCMC has asked John Whitehead (UDEQ) for regulatory flexibility or variance regarding the NTU standard. Because of the limitations and uncertainties of hydraulic dredging, PCMC has revised the dredging strategy to evaluate other options that would be short term impacts to the watershed with long term benefits. Increasing the capacity of Pond 9 as well as constructing an up gradient detention basin will increase sediment retention time, thereby reducing pollutant load to East Canyon Creek. The combination of retrofitting the current drain along with the other improvements will result in PCMC gaining control of sediment closer to the source and thereby minimize downstream impacts to the watershed. PCMC is also appreciative to Lee Duncan, the East Canyon Creek Watershed Coordinator for providing \$10,500.00 of 319 funds for cost share.

Finally, the Parks Department has increased the number of dog waste dispensers, to a total of 13 which are situated through out the City. These dispensers are used and serviced frequently and the staff continues to supply these stations with bags for the public's convenience. The cost the Parks Department incurs in purchasing these units is \$50/unit.

Subsection 5.4 Water Department

PCMC Water Department for the year 2006 was instrumental in educating the public on the importance of water conservation practices. This commitment is well defined in the City's Water Conservation Plan, which was written and promulgated into a City ordinance in 2003. During the year the department actively enforced the water conservation ordinance by issuing warning notices as well as citations. Most of the infractions were related to citizens not complying with the landscape watering restrictions. Nonetheless, PCMC had continued participation by citizens that volunteered to enter the "Third Day" landscape watering program. In addition, the department also sent out Water Conservation Brochures, participated in the Water Festival, and paid for Public Service Announcements during the summer on KPCW Radio.

Other outreach efforts include water educational information being inserted into utility bills to further educate the public. Lastly, water conservation advertisements were published in the Park Record newspaper as well as the www.parkcity.org website where there is a water consumption chart allowing residents the capability to inquire into their individual water usage. Among continuing with these efforts, this department has a measurable goal for 2006 to promulgate a Drinking Water Source Protection Zone ordinance in order to further protect the City's drinking water sources.

SECTION 6.0

CONSERVATION RESERVE PROGRAM (CRP)

This year the Utah Job Corp planted 250 Golden Currants and 250 Red Osier Dogwoods within the McLeod Creek stream corridor in accordance with NRCS work plan for the area.

Approximately 200 lbs. of refuse was removed from the stream and disposed of by the Parks Department. These efforts further reinforce PCMC commitment for enhancing the 23 acres of Conservation Reserve Program (CRP) stream corridor which is designated as permanent riparian buffer. For the last three years these volunteers have planted more than 4,000 trees within the buffer area and 400 lbs of native seed mix has been broadcast and established. Due to these efforts the McLeod Creek stream corridor has been improved substantially with establishment of native grasses and trees. Pictures 9 and 10 depict the improvements made to McLeod Creek spanning from 2002 to 2005.



Picture 9: Headwaters of McLeod 2002.



Picture 10: Headwaters of McLeod 2005.

PCMC is very appreciative of the Job Corp volunteers and look forward to their continued participation in the program. It should also be noted that the Job Corp crew also installed five Christmas tree revetments in areas that were prone to erosion during the spring run-off. Due to the extreme flows this year the majority of revetments failed, therefore plans will be made to reinstall them this year.



Picture 11: Installation of Christmas tree revetment April 05.

The CRP program has given the City the opportunity to commit a portion of McLeod Creek stream corridor to permanent riparian buffer area for controlling NPS pollution. The City Council unanimously approved entry into the program and 23 acres were enrolled on June 1st, 2003.

SECTION 7.0 MONITORING AND SAMPLING

Currently, Park City performs visual water quality monitoring during precipitation events at various locations within the city limits. Furthermore the City continues to sample the Prospector Drain outfall (**Addendum 14**) located at Prospector Park and a pilot anaerobic treatment wetland (**Addendum 15**). Furthermore, the Recycling Facility (Recycle Utah) has been conducting the required sampling defined within the facility SWPPP and this data has been submitted to the City which is summarized in this report.

Subsection 7.1 Prospector Drain

PCMC constructed pilot anaerobic wetland cell has been sampled now for fourteen months, revealing the process reduces zinc by 44% and cadmium 76%. Dr. Fitch with the University of Missouri Rolla Civil Environmental Engineering Department along with an independent reviewer known as Nature Works (<http://www.nature-works.net>) are finalizing a design for a full scale unit to be constructed in 2006. This year Dr. Fitch presented to City Officials, John Whitehead (UDEQ) and Lee Duncan (East Canyon Creek Watershed Coordinator) a **PowerPoint presentation** that summarized his direction and the specific processes involved within an anaerobic treatment cell. Once Dr. Fitch has completed a final design UDEQ, USEPA, and the Upper Silver Creek Watershed Stakeholder Group, will be given the opportunity to review the design and pose questions to Dr. Fitch. **Addendum 15** contains the results for the pilot cell to September 22nd 2005 and **Addendum 14** contains a summary of the sampling results for the Prospector Drain. No flows are documented from April to August of 2005 due to the flow meter not functioning. The unit was finally repaired and put back into service in September.

Funding for this project was approved by the City Council and a budget of \$150,000.00 to fund the construction of an anaerobic treatment system for treating the Prospector drain has been established. Before the unit is constructed, PCMC will retrofit the drain in order to feed water to the anaerobic cell. This includes exposing the drain line at the start of PCMC owned land and installing a valve capable of adjusting the flow. Also planned is the isolation of the Prospector Drain flow to eliminate any surface water influence. This part of the project is planned to be completed this year and if weather does not permit, it will be completed spring of 2006.

Subsection 7.2 Golf Course Water Sampling

During the year of 2005, Park City Golf Course (PCGC) procured 8 water quality samples this year at approximately 7 locations on the course where perennial streams enter and exit the golf course. The samples are analyzed for the following analytical constituents:

- Nutrients
- Total suspended solids (TSS)
- Visual observation

This monitoring assists PCGC to detect fertilizer leaching and assess management practices. The sampling frequency for this monitoring is done once every other month during the winter and once per-month during the golfing season.

SECTION 8.0**HOUSE HOLD HAZARDOUS WASTE COLLECTION**

The City recognizes that as the population grows the need to develop a household hazardous waste program becomes more evident. Therefore, the City continues to promote Recycle Utah's efforts in regards to the Household Hazardous Waste Collection events. The City assists this facility with the Storm Water Pollution Prevention Plan (SWPPP) requirements and analytical has been submitted to the City (**Addendum 17.0**). Per the submitted plan the facility will formally report these results in accordance with their permit.